

About Becker Electric

Becker Electric is a family owned electrical distributor serving industrial OEM and MRO markets, industrial facilities, commercial construction and industrial contractors. Founded in 1920, the company has grown to over 200 employees with eight locations in Ohio, Indiana and Georgia, representing top product brands. With specialized teams, Becker's offers unparalleled service and customized solutions to a diverse customer base. The Automation Solutions Group pairs experienced sales professionals with electrical engineers to assist in every phase of industrial automation projects, from design to post-installation tech support. Becker's Energy Solutions team provides energy audits and financial analysis to suggest turnkey installations to reduce energy consumption and cost. In addition, Becker's provides inventory management services, including bin stocking and kitting and has the ability to service national accounts through a commodity management partnership.

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Becker's Automation Solutions Cuts Downtime by 50% with Sensor Implementation

Summary:

The production engineer for a pharmaceutical manufacturer was experiencing significant downtime in a particular area due to an inconsistent detection by a red-light sensor. The current system was evaluated by one of Becker's Automation engineers and the suggested solution was both cost-effective and easy to implement.

The Challenge:

The production process requires the rotation of transparent component carrier trays to allow a robot to properly grip and move the trays to the next location. As the trays came into the area, a red light sensor detected the presence of a tab on a portion of the trays, rotating those to the proper position. The current system was experiencing a 17% failure rate, with operators repeatedly adjusting the equipment and trays. Each failure to move the tray to the correct position required the machine to be shut down, the operator to manually reorient the tray, followed by a minimum machine restart time of 30 seconds. Additionally, each malfunction had to be documented by the operator. The production engineer estimated 15 minutes of lost production time for each hour.

The Solution:

"The red light sensor was detecting both the targeted tab and the body of the tray", notes Becker's Automation Solutions engineer for the project, Doug Davis. This action led to inconsistency in the trays being rotated correctly and caused the production line to shut down repeatedly. Davis recommended installation of a SensoPart photoelectric diffuse sensor with BlueLight technology and background suppression. This sensor offers greater detection efficiency than conventional red light proximity sensors when detecting dark or transparent objects, without the use of a reflector. From a cost standpoint, the solution came in under expectations.

A mock-up of the process was created by Davis at one of Becker's locations to test the new sensor prior to full installation. The test application worked seamlessly and the products were then installed in the pharmaceutical manufacturing facility.

The Results:

Implementation of Becker's solution eliminated 40-50% of down time per hour on this production line, according to the production engineer. In addition, the amount of labor involved in the process was reduced, as there was no longer a need for an additional operator to frequently reorient the erroneously detected trays.